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CORP., MATROX TECH, INC., and
AEROFLEX COLORADO SPRINGS, INC.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

RICOH COMPANY, LTD.,

Plaintiff,

VS.

AEROFLEX INCORPORATED, AMI SEMICONDUCTOR, INC., MATROX ELECTRONIC SYSTEMS LTD., MATROX GRAPHICS INC., MATROX INTERNATIONAL CORP., MATROX TECH, INC., AND AEROFLEX COLORADO SPRINGS, INC.

Defendants.

SYNOPSYS, INC.,

Plaintiff,

VS.

RICOH COMPANY, LTD.,

Defendant.

Case No. C03-04669 MJJ (EMC)

Case No. C03-02289 MJJ (EMC)

**NOTICE OF MOTION AND MOTION FOR
RULE 11 SANCTIONS AGAINST RICOH
FOR ASSERTING FRIVOLOUS CLAIMS**

Date: October 17, 2006
Time: 9:30 a.m.
Courtroom: 11, 19th Floor
Judge: Martin J. Jenkins

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NOTICE OF MOTION AND MOTION

2 PLEASE TAKE NOTICE that on October 17, 2003, at 9:30 a.m., before the Honorable Martin
3 J. Jenkins in Courtroom 11, 19th Floor, in the United States District Court, 450 Golden Gate Avenue,
4 San Francisco, California, Defendants Aeroflex Incorporated, Aeroflex Colorado Springs, Inc., AMI
5 Semiconductor, Inc., Matrox Electronic Systems Ltd., Matrox Graphics Inc., Matrox International
6 Corp., and Matrox Tech, Inc. (“the Customer Defendants”) will each move for sanctions pursuant to
7 Rule 11. of the Federal Rules of Civil Procedure against Ricoh Company, Ltd. (“Ricoh”) and Ricoh’s
8 counsel for their continued assertion of frivolous claims that the Customer Defendants literally infringe
9 U.S. Patent No. 4,922,432 (“the 432 patent”) despite the complete failure of Ricoh to present any
10 expert opinion that the Customer Defendants meet one of the necessary elements of the asserted patent
11 claims, as that element has been defined by the Court.

12 As sanctions for the Rule 11. violation, the Customer Defendants seek an order by the Court:
13 (1) dismissing all of Ricoh's infringement claims against the Customer Defendants, (2) directing Ricoh
14 and/or Ricoh's counsel to pay for all attorney's fees and costs incurred in defending against Ricoh's
15 infringement claims from June 23, 2006 to the present, and (3) directing Ricoh and/or Ricoh's counsel
16 to pay the attorney's fees and costs incurred in bringing the present motion.

17 This motion is based on the memorandum of points and authorities set forth below, the
18 accompanying declarations, exhibits, and proposed order, the oral arguments of counsel at the hearing
19 on this motion, and all other pleadings and matters of record in these actions.

MEMORANDUM OF POINTS AND AUTHORITIES

21 | I. INTRODUCTION

22 Ricoh's case should be dismissed because Ricoh has no Rule 11. basis to continue to assert that
23 the Customer Defendants infringe the '432 patent.

24 The Court ruled that the patentee disclaimed *all register-transfer-level descriptions* (“RTL
25 descriptions”) during prosecution of the patent application for the ‘432 patent, as follows:

26 [A]n examination of the '432 patent's public record fails to provide any support for Ricoh's distinction between "structural" and "functional" RTL-type input systems.

Given these findings, Ricoh's attempt to limit the patentee's disclaimer to only "structural" level RTL-type input systems is unpersuasive. . . . Accordingly, the

prosecution history indicates that the patentee expressly disclaimed all register-transfer level descriptions.

Given these considerations, the Court defines “architecture independent actions and conditions” as *functional or behavioral aspects of a portion of a circuit (or circuit segment) that does not imply a set architecture, structure, or implementing technology, but excludes the use of register-transfer level descriptions as taught in Darringer.*

5 Ex. 8 at 12.¹. Given this ruling, the Court’s analysis of the Motion should begin and end here for two
6 reasons: (1) Ricoh acknowledges that the Customer Defendants’ input is RTL; and (2) its specially
7 retained “architecture independent expert” did not even analyze the designs to determine if they were,
8 or were not, RTL.

In its Final Infringement Contentions, Ricoh not only cites dozens of documents that indicate the inputs are RTL, but also specifically quotes portions of those documents and deposition testimony indicating that the inputs are RTL. Indeed, Ricoh selected the following direct quotes from the documents relied upon in their Final Contentions to support their infringement claims: (input code at issue stored in “OJGBE-001\rtl(input)\OJGBE-001\scripts”); (“Synthesis works best (i.e., has the most freedom to try different optimizations) with high level RTL constructs.”); (“[B]ack when Synopsys first came out with their Design Compiler (DC) tool, we slowly learned that we could be more productive ASIC designers by writing Synopsys compatible VHDL RTL code and inferring gates instead of instantiating gates with schematic capture tool.”); and (“I am intending RTL to mean a level of abstraction used to describe the circuit”). Exh. 4 at 13-16. Moreover, its primary expert, Dr. Soderman, who opined on every single technical infringement, unenforceability, and validity issue except the “architecture independent issue,” has expressly conceded that the inputs are RTL. Ex. 13 (Soderman) at 89:14-90:5. Thus, because the Court has already determined that the patentee disclaimed ALL RTL, Ricoh has had no basis to proceed with this lawsuit since at least as early as April 7, 2005, the Claim Construction Order.

¹ Unless otherwise noted, all exhibits referenced in this motion are attached to the Declaration of Denise M. De Mory In Support of Synopsys' and Customer Defendants' Summary Judgment Motions filed concurrently herewith. All deposition references are likewise included in the De Mory Declaration.

1 Ricoh's recent attempts to circumvent the Claim Construction Ruling cannot save it from Rule
 2 11 sanctions. In its recently served expert reports, Ricoh's expert (retained solely to opine on the
 3 "architecture independent" inputs, under odd circumstances and for suspect reasons as described
 4 below), attempts to re-characterize the Claim Construction Order as indicating that only "Darringer
 5 RTL," an alleged special flavor of RTL is disclaimed, but this characterization runs directly afoul of
 6 the subsidiary rulings in the Claim Construction Order. Dr. Papaefthymiou, Ricoh's architecture
 7 independent expert, says that "Darringer RTL" is structural RTL, and that the defining characteristic of
 8 Darringer RTL is that it only undergoes simple translation. Thus, he concludes that any input that is
 9 not purely structural and does not undergo only simple translation is "architecture independent." On
 10 these issues, Ricoh is simply thumbing its nose at the Court, as the chart below demonstrates:

What Dr. Papaefthymiou Says In His Expert Report	What the Court's Claim Construction Order Says
"In my opinion, the Darringer Patent uses the term 'RTL' in the sense of the older (then-prevalent) structural RTL that is not claimed by the '432 patent. Ex. 9A at 13:6-8.	"[A]n examination of the '432 patent's public record fails to provide any support for Ricoh's distinction between 'structural' and 'functional' RTL-type input systems. Given these findings, Ricoh's attempt to limit the patentee's disclaimer to only 'structural' level RTL-type input systems is unpersuasive." Ex. 8, at 12:9-12.
"That the RTL used in the Darringer Patent closely describes the architecture of the hardware desired in the design is evident from the requirement in the Darringer Patent that the inputs undergo a simple translation of the specification into equivalent AND/OR logic." Ex. 9A at 13:13-17.	"The '435 patent [Darringer patent] specifically defines a register-transfer level description and the subsequent translation or transformation steps described in that patent do not alter this explicit definition." Ex. 8 at 12:5-7.

23 For the additional reason that Ricoh's position runs directly afoul of what this Court has
 24 already ruled in the Claim Construction Order in this case, Rule 11 sanctions should be granted.

25 If one ignores the "simple translation" fiction above, Dr. Soderman admitted at deposition that
 26 the Customer Defendant inputs are in fact RTL, and that they meet what the Court referred to as the
 27 "explicit definition" set forth in Darringer. As of the time of its expert reports, however, neither Ricoh
 28

1 expert made any effort to determine whether or not the Customer Defendant inputs meet the allegedly
 2 special “Darringer RTL” definition or not. Thus, Ricoh has no good faith basis to proceed for this
 3 reason as well.

4 The Court indicated that the “explicit definition” of RTL set forth in Darringer, which is not
 5 modified by the subsequent translation or transformation step, is as follows:

6 [T]he process of this invention begins at step 100 with a register-transfer level
 7 description, e.g. of the type shown in Fig. 4. The description consists of two parts: a
 8 specification of the inputs, outputs and latches of the chip to be synthesized; and a
 9 flowchart-like specification of control, describing for a single clock cycle of the
 machine how the chip outputs and latches are set according to the values of the chip
 inputs and previous values of the latches. At step 102 in FIG 2, the register-transfer
 level description undergoes a simple translation to an initial implementation of
 10 AND/OR logic. ‘435 patent, col. 5:27-38.

11 Ex. 8 at 12 n. 7. Analyzing whether or not something meets this element requires looking at a block of
 12 code to determine if, for a particular function, the inputs, outputs, and latches (or registers) are
 13 specified, and if there is information describing for a single cycle how the chip outputs and latches are
 14 set according to the values of the chip input. Ricoh’s expert, however, did not analyze blocks of code.
 15 Instead, Ricoh’s expert focused solely on individual operations, i.e., + or -. Indeed, Dickstein Shapiro
 16 lawyers created search reports that Dr. Papaefthymiou did not review but apparently relied on that
 17 summarized, for example, how many +'s were in a design. Exhibit 10 (Papaefthymiou) at 75:1-76:25.
 18 If +'s were in a design, Dr. Papaefthymiou opined that the design infringed because the +'s and other
 19 operators required more than simple translations (even for designs Ricoh does not have). *Id.* at 77:1-
 20 79:16. Ricoh and its experts made no effort to ascertain whether the Customer Defendants’ designs
 21 contain a specification of inputs, outputs, and latches, or any information about control.² The reason,
 22 of course, is simple: they do. Because Ricoh has not even done this analysis (because it loses on this
 23 issue -- all RTL contains this information), Ricoh has no Rule 11 basis to proceed for this reason as
 24 well.

25
 26 ² In addition, Ricoh and its experts ignored the specific language of the Court’s Claim Construction which defines
 27 architecture independent inputs as “the functional or behavioral aspects of *a portion of a circuit (or circuit segment)*.”
 Ricoh and its experts cannot credibly argue that they did not understand that a + is not a portion of a circuit or circuit
 segment.
 28

1 Finally, Ricoh's decision to hire Dr. Papaefthymiou evidences what can be characterized as
 2 consciousness of guilt. First, it is quite remarkable in the first instance that although Dr. Soderman has
 3 been in the ASIC design business since prior to 1990 and up through today, Ricoh hired Dr.
 4 Papaefthymiou, who obtained his Ph.D. in 1993, to opine about how the meaning of RTL has changed
 5 so much over time that one cannot determine what it means without context. Dr. Soderman's
 6 admissions at deposition are also telling: Dr. Papaefthymiou was obviously hired because Dr.
 7 Soderman does not (and was not going to) support the opinion they needed to keep this case going.
 8 Finally, Dr. Papaefthymiou was hired because Dr. Soderman submitted a patent application to the
 9 USPTO in 1997, and authored many articles, in 1997 and 1998 that flatly contradict Dr.
 10 Papaefthymiou's contention that the definition of RTL has changed over time and one must look at
 11 context. In fact, the RTL described in Dr. Soderman's 1997 patent application, Ex. 17, and 1998
 12 papers, Exs. 18-20, has the same characteristics as the Darringer patent, and both have the same
 13 characteristics as the Customer Defendant designs. Moreover, Dr. Soderman's patent and papers
 14 confirm that the Design Compiler system requires these characteristics as characteristics of the input.³

15 For the additional reasons set forth below, this Court should grant Rule 11 sanctions unless
 16 Ricoh withdraws its infringement claims during the grace period.⁴

17 **II. STATEMENT OF FACTS**

18 Ricoh alleges that the Customer Defendants infringe claims 13-17 of the '432 patent by
 19 designing ASICs using Synopsys' software tools. The '432 patent relates generally to a computer-
 20 aided design system for designing ASICs in which a user inputs a description of the desired functions

21
 22
 23 ³ Indeed, Dr. Soderman represented to the United States Patent & Trademark Office in 1997 that RTL is the expected input
 24 to synthesis tools. The invention disclosed in U.S. Patent No. 6,226,776 ("the '776 patent") "converts the preliminary
 25 hardware design to a register transfer level HDL, which enables the HDL design to be synthesized." Ex. 17 at 4:42-44. In
 26 a 1998 paper entitled "Implementing C Algorithms in Reconfigurable Hardware using C2Verilog," Dr. Soderman states
 27 that "the compiled RTL Verilog can then be synthesized using any one of a number of products from Synopsys..." Ex. 20.
 28 Discussing a weakness of a prior art methods to the '776 patent, Dr. Soderman states: "Design output...can be in so-called
 "behavioral HDL" which in many cases cannot be synthesized by existing synthesis programs into a gate-level
 representation of the hardware. The system in accordance with the invention generates register transfer level HDL that can
 always be synthesized." Ex. 17 at 27:15-20.

4 The Customer Defendants nonetheless reserve the right to seek other sanctions as allowed by law as well.

1 for the ASIC into the design system, which then translates the description into a “netlist” of the
 2 hardware cells required to implement the desired functions of the ASIC.

3 Claim 13 of the ‘432 patent is the only independent claim asserted by Ricoh.⁵ The text of
 4 Claim 13 reads, in relevant part:

5 A computer-aided design process for designing an application specific integrated circuit
 6 which will perform a desired function comprising:
 7 . . .
 8 describing for a proposed application specific integrated circuit *a series of architecture*
 9 *independent actions and conditions*;

10 The “describing” step at issue requires that the proposed ASIC be described by a series of
 11 “*architecture independent* actions and conditions.”

12 During prosecution of the ‘432 patent, the patentee added the term “*architecture independent*”
 13 to the ‘432 patent claims in order to distinguish the claimed invention over prior art, including U.S.
 14 Patent No. 4,703,435 issued to Darringer et al (“Darringer”). See Exh. 15-16; 40. Darringer et al.
 15 discloses a computer-aided design system for designing ASICs in which the user inputs a specification
 16 for the ASIC in a format called register-transfer level, or “RTL.” The ‘432 patentee argued to the
 17 patent examiner that the additional term “*architecture independent*” distinguished his invention from
 18 Darringer’s because “the specifications used by Darringer et al. are not truly at an architecture
 19 independent level, but rather are at a lower level which is indeed hardware architecture dependent and
 20 defines the system at a ‘register-transfer’ level description. Ex. 16 at 7 (emphasis in original). The
 21 Customer Defendants and Synopsys argued that this statement showed that the ‘432 patentee intended
 22 to exclude all types of RTL descriptions from the scope of the ‘432 patent claims. Ex. 6 at 34-35.

23 Ricoh, however, tried to argue that Darringer discloses the use of only a “primitive” or
 24 “structural” type of RTL, as opposed to more “functional” types of RTL such as VHDL and Verilog.
 25 Ex. 5 at 21:3-17; Ex. 7 at 8:6-10. Ricoh asserted that the patentee’s statement about Darringer
 26 therefore should be interpreted as a disclaimer of only the “primitive/structural” type of RTL. *Id.*

27
 28

5 Claims 14-17 are dependent on claim 13. Thus, if claim 13 is not infringed, then claims 14-17 also are not infringed. See
 Wahpeton Canvas Co., Inc. v. Frontier, Inc., 870 F.2d 1546, 1552 n.9 (Fed. Cir. 1989) (“One who does not infringe an
 independent claim cannot infringe a claim dependent on (and thus containing all the limitations of) that claim.”).

1 Specifically, Ricoh argued that “to the extent it is necessary to clarify what is excluded from the proper
 2 interpretation of the term ‘architecture independent actions and conditions,’ the exclusion should be
 3 limited to ‘basic’ or ‘primitive RTL-type descriptions’ and not the entire category of ‘RTL’
 4 descriptions, as contended by Defendants.” *Id.* at 21:14-17.

5 The Court rejected Ricoh’s argument and essentially agreed with the Customer Defendants and
 6 Synopsys’ interpretation, stating in its April 7, 2005 Claim Construction Order that:

7 [A]n examination of the ‘432 patent’s public record fails to provide any support for
 8 Ricoh’s distinction between “structural” and “functional” RTL-type input systems.
 9 Given these findings, Ricoh’s attempt to limit the patentee’s disclaimer to only
 10 “structural” level RTL-type input systems is unpersuasive. . . . Accordingly, the
 11 prosecution history indicates that the patentee expressly disclaimed all register-transfer
 12 level descriptions.

13 Given these considerations, the Court defines “architecture independent actions and
 14 conditions” as *functional or behavioral aspects of a portion of a circuit (or circuit
 15 segment) that does not imply a set architecture, structure, or implementing technology,
 16 but excludes the use of register-transfer level descriptions as taught in Darringer.*

17 Ex. 8 at 12:9-19 (emphasis in original).

18 As for what is a “register-transfer level description as taught in Darringer,” the Court stated that
 19 “[t]he ‘435 patent **specifically defines** a register-transfer level description and the subsequent
 20 translation or transformation steps described in that patent do not alter this **explicit definition.**⁷” Ex. 8
 21 at 12:5-7 (emphasis added, footnote in original). The Court’s footnote 7 points to the definition of
 22 RTL set forth in the Darringer patent as follows:

23 [T]he process of this invention begins at step 100 with a register-transfer level
 24 description, e.g. of the type shown in Fig. 4. The description consists of two parts: a
 25 specification of the inputs, outputs and latches of the chip to be synthesized; and a
 26 flowchart-like specification of control, describing for a single clock cycle of the
 27 machine how the chip outputs and latches are set according to the values of the chip
 28 inputs and previous values of the latches. At step 102 in FIG 2, the register-transfer
 1 level description undergoes a simple translation to an initial implementation of
 2 AND/OR logic. ‘435 patent, col. 5:27-38.

3 Ex. 8 at 12 n. 7.

4 On March 24, 2006, Ricoh served its Final Infringement Contentions. Those contentions, as
 5 described above, cite to papers that confirm that the inputs used by the Customer Defendants to
 6 “describe” their ASICs are RTL. In addition to the documents quoted above (that were also quoted by
 7

1 Ricoh in their Final Infringement Contentions), the following documents also indicate that the inputs
 2 are RTL:

- 3 • MGI 0033893 at ¶ 1: “Your success with Design Compiler is directly related to
 your RTL code and how it interacts with DC.”
- 4 • MGI 0033900 at ¶ 1.5.1: “Think of synthesis as refining (or polishing) what you
 started (with your RTL description).”
- 5 • MGI 0033903 at second column: “The functionality of generic flip-flops [i.e.,
 latches] is defined by sequential logic description in your RTL.”
- 6 • RCL011421-22: “If you remember back when Synopsys first came out with their
 Design Compiler (DC) tool, we slowly learned that we could be more productive
 ASIC designers by writing Synopsys compatible **VHDL RTL code** and inferring
 gates instead of instantiating gates with a schematic capture tool.” (emphasis
 added)
- 7 • SP 0167847: “DC Ultra is the best-in-class, industry leading RTL Synthesis
 solution for today’s challenging designs . . .”
- 8 • SP 0167849: “DC Ultra now allows for automatic extraction and optimization of
 Finite State Machines (FSMs) from the **RTL code** for the purpose of optimizing
 the state assignment. This feature is supported **for both Verilog and VHDL**.”
 (emphasis added)
- 9 • SP59897: “The **register transfer level** completely models your design in detail.
 All clocks are defined and all registers declared. *Use this HDL model as input for
 Design Compiler.*” (italics added)
- 10 • SP59968: (Presentation slide showing that Design Compiler optimizes logic in
 RTL code.)

11 See Exh. 4 at 13-16. Additionally, several presentation charts cited in Ricoh’s Final Infringement
 12 Contentions show RTL as the direct input to Synopsys’ HDL Compiler (or “Presto”). See Ex. 4 citing
 13 SP 0167849; SP 0167852; SP 0168745; SP 0168746; SP 0168748; SP 0168750; SP 0168752; MGI
 14 0001490; and SP59897. Finally, the deposition testimony cited in Ricoh’s Final Contentions also
 15 unambiguously state that RTL is the input to Design Compiler. See Ex. 4 citing David Tran Dep., Vol.
 16 1 at p. 19, ll. 6-7 (“the language, a hardware description language that the tools support is RTL.”);
 17 Shir-Shen Chang Dep. at p. 54, ll. 1-3 (“For Design Compiler, we use all kinds of input, including the
 18 RTL level of the abstraction.”); Karen Pieper Dep. at p. 14, ll. 22-23 (“Q: What did you mean by
 19 [synthesis]? A: Translating input RTL to unmapped gates.”)). All of these documents cited in Ricoh’s
 20 Infringement Contentions clearly show that RTL is the input to Design Compiler and that VHDL and
 21 Verilog are considered RTL.

1 On June 24, 2006, Ricoh served six infringement expert reports on the Customer Defendants –
 2 three reports from Dr. Donald Soderman (one each for Aeroflex, Matrox, and AMI), and three reports
 3 from Dr. Marios Papaefthymiou (one each for Aeroflex, Matrox, and AMI). Exs. 9-10. The three
 4 reports of Dr. Soderman are virtually identical to one another, with only minor variations depending on
 5 which Customer Defendant they pertain to. The same is true for the three reports of Dr.
 6 Papaefthymiou.⁶ As discussed in greater detail below, these reports are premised first and most
 7 fundamentally on the notion that the Court did not rule that all RTL is excluded, but rather that there is
 8 some non-disclaimed/non-Darringer RTL; that the test for whether or not something falls into the
 9 category of non-disclaimed/non-Darringer RTL is whether the inputs undergo a simple translation or
 10 not. Finally, the reports base their conclusions solely upon whether or not the inputs contain VHDL or
 11 Verilog HDL operators such as + or -.⁷ Notably, they do not analyze whether the designs contain a
 12 specification of inputs, outputs, and latches, or any information about control as to how the ouputs and
 13 latches are set.

14 On August 14, Dr. Papaefthymiou was deposed. Although his report indicates that RTL can be
 15 structural or functional RTL, he made no effort to determine whether or not the Customer Defendant
 16 designs were either structural or functional RTL:

17 Q As you sit here today, do you have an opinion about whether or
 18 not the customer designs at issue in this litigation are structural RTL?

19 A I was not asked to formulate an opinion about that.

20 Q. And therefore you have no opinion about that; is that correct?

21 A. At this point, I have not considered the question.

22
 23 ⁶ Thus, for the sake of brevity, page and line citations to Dr. Soderman's and Dr. Papaefthymiou's reports in this brief will
 be based on the reports pertaining to the Aeroflex entities, Ex. 9A and 11A.

24 ⁷ Separate and apart from the merits of this motion, this fact alone demonstrates the severe abuse of process in which Ricoh
 has engaged. Ricoh insisted both that it had to have every input and output for every product designed using Design
 25 Compiler by the Customer Defendants (some 400 in total, resulting in the expensive production of millions of pages of
 documents) as well as deposition testimony on each of the products – (well over 100 hours of testimony). Then, after
 26 insisting on this discovery that cost millions of dollars, Ricoh's whole infringement theory is premised on the notion that
 the designs contain at least one + or -. Ricoh didn't need discovery for this – all they had to do was buy an HDL synthesis
 27 book, or talk to its own engineers who have been using Design Compiler for over 15 years. This type of abuse makes this
 case exceptional.

1 Q. And the same is true with regard to the functional RTL question,
 2 just so that the record's clear. As you sit here today, you've not been asked to
 3 formulate an opinion about whether or not the customer designs at issue in this
 litigation are functional RTL, and therefore you have no opinion on that as you
 sit here today?

4 A. That is correct. At this point I have not formulated an opinion about that.

5
 6 Ex. 10 at 44: 4-22. Thus, even though Dr. Papaefthymiou is the alleged "architecture independent"
 7 expert, he made no effort to determine if the Customer Designs were or were not RTL of any variety.
 8 In fact, he never even had physical possession of the designs and only looked at some over a Web-Ex
 9 connection. *Id.* at 191:9-192:4.

10 Dr. Soderman, for his part, clearly admitted that that the designs were RTL, and leaving aside
 11 the already rejected "simple translation issue," admitted that the Customer Defendant designs met all
 12 the elements of the definition of Darringer cited by the Court as the "explicit definition." Darringer
 13 defines RTL as "consist[ing] of two parts: "a specification of the inputs, outputs and latches of the chip
 14 to be synthesized; and a flowchart-like specification of control, describing for a single clock cycle of
 15 the machine how the chip outputs and latches are set according to the values of the chip inputs and
 16 previous values of the latches." Dr. Soderman testified as follows:

17 Q: Do the customer designs include a specification of the inputs?

18 A: Yes.

19 Q: Do the customer Defendant designs include a specification of the outputs?

20 A: Yes.

21 Ex. 13 at 77:21-78:1.

22 Q: Let's do it this way. Do the customer Defendant designs include a
 23 specification of FlipFlops⁸ if we define specification of FlipFlops to include inferring if
 24 FlipFlop from statements such as always@(posedge)?

25 A: Yes.

26 *Id.* at 80:8-13.

27
 28 ⁸ "FlipFlops" is another term for latches in the ASIC synthesis industry.

1 Q: Let me try it again. Do the customer Defendant designs include for each
 2 clock cycle a description of how the values of the outputs and FlipFlops should be set
 3 according to the values of the inputs, the previous values of the FlipFlops and the logic
 4 functionality as specified by the HDL operators?

5 A: Yes

6 *Id.* at 108:2-9

7 Moreover, Dr. Soderman admitted that Design Compiler has long required RTL input:

8 Q: So let's make these specific, these questions specific to Design Compiler.
 9 In 1997 – so I'll go back a little bit, just so we have the record clear. In 1997, a compiler
 10 like Design Compiler needed information about what the inputs and outputs were going
 11 to be; is that correct?

12 A: Yes.

13 Q: In 1997, a compiler like Design Compiler needed information about the
 14 cycle-by-cycle characteristics or behavior of the circuit; is that correct?

15 A: Indeed in some of those functional descriptions, yes.

16 Q: Did it need information on timing, or how things performed on a clock-by-
 17 clock cycle basis?

18 A: That was additional information that was put in.

19 *Id.* at 49:14 –50:5.

20 Notwithstanding the admissions of its experts, and despite the flaws in its analysis, Ricoh
 21 continues to argue to the Court that the Customer Defendants infringe the '432 patent. For example, in
 22 a June 28, 2006 reply brief on a discovery motion, Ricoh made the assertion that "as Ricoh's expert
 23 reports and infringement contentions demonstrate, every other declared Matrox product infringes the
 24 '432 patent in multiple ways and on similar theories." 6/28/06 Ricoh's Reply in Support of Its Motion
 25 to Compel Against Matrox Defendants, at 2:7-9. Similarly, in a July 18, 2006 joint letter to the Court
 26 on another discovery issue, Ricoh characterized Defendants' attempts to seek additional discovery
 27 regarding the conception of the '432 patent as "reaching for straws," and argued that "[t]he issue is the
 28 '432 patent and defendants' infringement of it." 7/18/06 Joint Letter to J. Chen, at 2-3.

1 **III. ARGUMENT**

2 **A. Rule 11 Prohibits Counsel from Continuing to Advocate Positions After They**
 3 **Become Untenable.**

4 Federal Rule of Civil Procedure 11 states in relevant part that:

5 By presenting to the court (whether by signing, filing, submitting, or later advocating) a
 6 pleading, written motion, or other paper, an attorney or unrepresented party is certifying
 7 that to the best of the person's knowledge, information, and belief, formed after an
 8 inquiry reasonable under the circumstances . . . the claims, defenses, and other legal
 9 contentions therein are warranted by existing law or by a nonfrivolous argument for the
 10 extension, modification, or reversal of existing law or the establishment of new law . . .
 11 [and] the allegations and other factual contentions the paper contains either have or are
 12 likely to have evidentiary support . . .

13 Fed. R. Civ. P. 11(b)(2) & (3). Should counsel violate Rule 11, the court may impose monetary and
 14 nonmonetary sanctions sufficient to deter repetition of the misconduct. *See* Fed. R. Civ. P. 11(c)(2);
 15 *Holgate v. Baldwin*, 425 F.3d 671, 680 (9th Cir. 2005).

16 In 1993, Rule 11 was amended in part to "emphasize[] the duty of candor by subjecting
 17 litigants to potential sanctions for insisting upon a position after it is no longer tenable . . ." Fed. R.
 18 Civ. P. 11, advisory committee's note (1993 amendment). After the 1993 amendment, a litigant's
 19 obligations under Rule 11 with respect to papers filed with or submitted to the court "are not measured
 20 solely as of the time they are filed with or submitted to the court, but include reaffirming to the court
 21 and advocating positions contained in those pleadings and motions after learning that they cease to
 22 have any merit." *Id.* Thus, Rule 11 sanctions may be granted for an attorney's continued advocacy of
 23 a position that is simply untenable. *See Buster v. Greisen*, 104 F.3d 1186, 1190 n.4 (9th Cir. 1997)
 24 ("Although prior to the [1993] amendments conduct was measured only at signing, . . . Rule 11 now
 25 authorizes sanctions for 'presenting to the court (whether by signing, filing, submitting, or *later*
 26 *advocating*)' a document otherwise sanctionable.") (emphasis in original); *Phonometrics, Inc. v.*
 27 *Economy Inns of America*, 349 F.3d 1356, 1361-63 (Fed. Cir. 2003) (Rule 11 violation for a patent
 28 plaintiff to continue asserting claims of infringement after adverse claim construction in related action
 rendered plaintiff's infringement theory untenable); *Battles v. City of Fort Myers*, 127 F.3d 1298, 1300
 (10th Cir. 1997) (Rule 11 "allows sanctions when an attorney continues 'insisting upon a position after
 it is no longer tenable.'"); *Turner v. Sungard Business Systems, Inc.*, 91 F.3d 1418, 1422 (11th Cir.

1 1996) (“That the contentions contained in the complaint were not frivolous at the time it was filed does
 2 not prevent the district court from sanctioning [plaintiff’s counsel] for his continued advocacy of them
 3 after it should have been clear that those contentions were no longer tenable.”).

4 Courts must apply an objective test to determine whether Rule 11 has been violated. *Yagman*
 5 *v. Republic Insurance*, 987 F.2d 622, 628 (9th Cir. 1993). A violation of Rule 11 does not require
 6 subjective bad faith. *Id.*

7 **B. To Prove Literal Infringement, Ricoh Must Show that the Customer Defendants’
 8 Accused Activities Meet Every Element of the Asserted Claims.**

9 Ricoh has asserted that the Customer Defendants infringe claims 13-17 of the ‘432 patent
 10 under a theory of literal infringement, as opposed to infringement under the doctrine of equivalents.⁹
 11 *See* Ex. 2 at 25:25-27. In order for a patentee to show literal infringement of a patent claim, the
 12 patentee must prove that the accused product or process meets every element or limitation of a claim.
 13 *Rohm and Haas Co. v. Brotech Corp.*, 127 F.3d 1089, 1092 (Fed. Cir. 1997). If even one element or
 14 limitation is missing or is not met as claimed, then there is no literal infringement. *See* *Mas-Hamilton*
 15 *Group v. LaGard, Inc.*, 156 F.3d 1206, 1211 (Fed. Cir. 1998); *see also* *Lantech, Inc. v. Keip Mach.*
 16 *Co.*, 32 F.3d 542, 547 (Fed. Cir. 1994) (“For literal infringement, each limitation of the claim must be
 17 met by the accused device exactly, any deviation from the claim precluding a finding of
 18 infringement.”). As the party asserting infringement, the burden is on Ricoh to prove infringement by
 19 a preponderance of the evidence. *See* *Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1535 (Fed. ir.
 20 1991).

21 **C. Ricoh’s Infringement Theory Is Untenable Because The Court Has Already
 22 Determined That All RTL Is Excluded And That Simple Translation Is Not The
 23 Appropriate Test**

24 The Court has excluded all RTL in its Order. Thus, this Motion must be granted because Ricoh
 25 has no good faith basis on which to proceed.

26
 27 ⁹ None of Ricoh’s experts alleges that the Customer Defendants infringe the ‘432 patent under the doctrine of equivalents,
 28 nor is there any such allegation in Ricoh’s Patent L.R. 3-6 Final Infringement Contentions.

1 Even if the Court had not excluded all RTL, the Motion should be granted because Ricoh's
 2 alleged distinctions between the disclaimed Darringer RTL and the undefined non-disclaimed/non-
 3 Darringer RTL are based on arguments already directly rejected by the Court. Indeed,
 4 Papaefthymiou's justification for the definition of the non-disclaimed/non-Darringer RTL depends on
 5 two arguments already directly rejected by this Court: that the disclaimed RTL is "structural RTL"
 6 and that the alleged "simple translation" of Darringer¹⁰ controls the RTL definition. Since the Court
 7 agrees has already decided these issues adverse to Ricoh, Dr. Papaefthymiou's opinion crumbles, and
 8 again, Ricoh has no good faith basis on which to proceed.

9 **D. Ricoh's Infringement Theory Is Untenable Because Its Experts Fail to Apply the**
 10 **Court's Construction of Terms in the "Describing" Element of '432 Claim 13.**

11 In its Claim Construction Order, the Court stated that the term "architecture independent
 12 actions and conditions" "excludes the use of register-transfer level descriptions as taught in Darringer."
 13 Ex. 8 at 12:16-19. As noted above, the Court further stated that the Darringer patent provides an
 14 "explicit definition" of what an RTL description is. *Id.* at 12:5-7. That definition – cited in footnote 7
 15 of the Claim Construction Order – states that an RTL description "consists of two parts: a specification
 16 of the inputs, outputs and latches of the chip to be synthesized; and a flowchart-like specification of
 17 control, describing for a single clock cycle of the machine how the chip outputs and latches are set
 18 according to the values of the chip inputs and previous values of the latches." *Id.* at 12 n.7. Thus, if
 19 the Customer Defendants' accused VHDL and Verilog descriptions meet this two-part definition, then
 20 they constitute "register-transfer level descriptions as taught in Darringer," and do not infringe the '432
 21 patent claims. In other words, the relevant question for infringement with respect to element D is: do
 22 the Customer Defendants' accused VHDL and Verilog descriptions have: (1) a specification of the
 23 inputs, outputs and latches of the chip to be synthesized; and (2) a flowchart-like specification of

24
 25
 26 ¹⁰ Not surprisingly, Ricoh is also wrong about the facts on this issue. The Darringer system did not undergo only a simple
 27 translation, and Darringer did teach using complex operators, not just AND/OR gates. These issues, however, need not be
 28 reached to decide this Motion.

1 control, describing for a single clock cycle of the machine how the chip outputs and latches are set
 2 according to the values of the chip inputs and previous values of the latches?

3 Neither of Ricoh's infringement experts addresses this issue in his expert report. Dr. Soderman
 4 asserts that the Customer Defendants met the describing step when they "entered a written description
 5 of the desired functions of each ASIC Product into [Synopsys'] HDL Compiler." Ex. 11A at 24:11-12.
 6 According to Dr. Soderman, "[t]he description was written in a high-level design language (an HDL
 7 such as VHDL or Verilog), and described a series of desired functions ("architecture independent
 8 actions and conditions") in the form of arithmetic operations (+, -, *, /, <, >, <=, >=), "if" statements,
 9 "case" statements, "wait" statements, "always" statements, etc. . ." *Id.* at 24:12-13. Dr. Soderman does
 10 no other actual analysis of the Customer Defendant designs, but instead goes on to state that "[f]rom
 11 my conversations with Dr. Marios Papaefthymiou and my review of his Expert Report, I understand
 12 that the input description [of the Customer Defendants] . . . does not include 'the use of register-
 13 transfer level descriptions as taught in Darringer,' as defined in the Claim Construction Order"
 14 *Id.* at 24:22-26. Thus, Dr. Soderman provides no opinion on the subject, but rather relies on whatever
 15 Dr. Papaefthymiou says in his report.

16 As for Dr. Papaefthymiou, he concedes (as he must) that "the Court in this case has construed
 17 the claimed inputs to exclude the use of RTL descriptions as taught in the Darringer Patent." Ex. 9A at
 18 13:5-6. But Dr. Papaefthymiou makes the critical error of failing to apply the Court's two-part
 19 definition of "RTL descriptions as taught in Darringer." Instead, Dr. Papaefthymiou states that "[i]n
 20 my opinion, the Darringer Patent uses the term 'RTL' in the sense of the older (then-prevalent)
 21 structural RTL that is not claimed by the '432 patent." *Id.* at 13:6-8. Dr. Papaefthymiou then goes on
 22 to argue that the Customer Defendants' VHDL and Verilog descriptions are different than the RTL
 23 disclosed in the Darringer patent because the Customer Defendants' descriptions do not undergo the
 24 "simple translation" into AND/OR logic that is shown in the Darringer patent. *Id.* at 13-15.

25 Dr. Papaefthymiou's opinion completely misses the point. First, what Dr. Papaefthymiou
 26 thinks the term "RTL" means in the Darringer patent is *completely irrelevant*, because the Court in
 27 footnote 7 of the Claim Construction Order pointed out that Darringer contains an explicit definition of
 28 "RTL." Second, even assuming *arguendo* that Dr. Papaefthymiou is correct that the Darringer patent

1 shows “simple translations” of design descriptions into AND/OR logic, that has nothing to do with
 2 whether or not the Customer Defendants’ VHDL and Verilog descriptions consist of: (1) a
 3 specification of the inputs, outputs and latches of the chip to be synthesized, and (2) a flowchart-like
 4 specification of control, describing for a single clock cycle of the machine how the chip outputs and
 5 latches are set according to the values of the chip inputs and previous values of the latches – the Court-
 6 ordered definition of Darringer RTL that must be applied.¹¹

7 Given that Ricoh has not disclosed a sufficient expert opinion to establish that the Customer
 8 Defendants meet element D of ‘432 claim 13, Ricoh cannot succeed in proving literal infringement
 9 against the Customer Defendants at trial. Regardless of the other opinions Ricoh’s experts have
 10 provided on the other elements of claim 13, without any supporting evidence on element D, Ricoh
 11 necessarily loses its literal infringement case. *See TechSearch, L.L.C. v. Intel Corp.*, 286 F.3d 1360,
 12 1369 (Fed. Cir. 2002) (summary judgment of noninfringement is proper “where the patent owner’s
 13 proof is deficient in meeting an essential part of the legal standard for infringement, because such
 14 failure will render all other facts immaterial.”); *Lantech, Inc. v. Keip Mach. Co.*, 32 F.3d 542, 547
 15 (Fed. Cir. 1994) (“For literal infringement, each limitation of the claim must be met by the accused
 16 device exactly, any deviation from the claim precluding a finding of infringement.”); *Mas-Hamilton*
 17 *Group v. LaGard, Inc.*, 156 F.3d 1206, 1211 (Fed. Cir. 1998).

18 **E. Ricoh’s Experts Have Now Admitted That the Inputs Are Darringer RTL**

19 In addition to the failure of analysis in its infringement contentions, Ricoh’s expert Dr.
 20 Soderman has now admitted not only that the inputs are RTL, but also that Design Compiler has long
 21 required such inputs. Ex. 13 (Soderman) at 49:14-50:5; 89:14-90:5. Moreover, Dr. Soderman has
 22 clearly testified that the inputs meet the “explicit definition” of RTL in the Darringer patent. *Id.* at
 23

24
 25 ¹¹ Indeed, whether or not something is RTL (or even Darringer RTL if there is some distinction) cannot be assessed from
 26 looking at a single operator in a description. The Claim Construction Order specifically and correctly talks about the
 27 “architecture independent actions and conditions” as relating to a circuit segment or a circuit portion. Moreover, one cannot
 28 determine whether a description contains: (1) a specification of the inputs, outputs and latches of the chip to be synthesized;
 and (2) a flowchart-like specification of control, describing for a single clock cycle of the machine how the chip outputs and
 latches are set according to the values of the chip inputs and previous values of the latches by looking solely at one operator
 such as one + or one AND in an input file.

1 77:21-78:1. Finally, Dr. Soderman has admitted that Customer Defendant designs are RTL today in
 2 the same manner in which papers he wrote and a patent he filed in 1997 and 1998 describe RTL. *Id.* at
 3 90:12-91:2. Indeed, Dr. Soderman's company promotes a tool whose function is to convert a higher
 4 level input into RTL. Ricoh undoubtedly knew all of this – or at a minimum, Dickstein Shapiro did.

5 Moreover, Ricoh has shown a consciousness of guilt in this regard. Indeed, as described above,
 6 having Dr. Papaefthymiou, a 1993 Ph.D. graduate, testify about this one issue notwithstanding Dr.
 7 Soderman's testimony on every other technical issue in this case evidences that Ricoh knew Dr.
 8 Soderman's testimony would not be favorable. Moreover, Ricoh likely knew that Dr. Soderman's
 9 papers, patent, and indeed current company's advertising is completely contrary to Ricoh's position
 10 about what is and is not RTL and how one of ordinary skill in the art would understand it.

11 **F. Despite Its Untenable Infringement Theory, Ricoh Continues to Assert that the
 12 Customer Defendants Infringe the '432 Patent In Violation Of Rule 11.**

13 Notwithstanding the complete failure of Ricoh to present a proper theory on the issue of
 14 whether the Customer Defendants' accused VHDL and Verilog descriptions constitute non-infringing
 15 "RTL descriptions as taught in Darringer," Ricoh continues to assert its infringement claims against
 16 the Customer Defendants. As discussed above, since the service of its infringement expert reports,
 17 Ricoh has made multiple arguments to the Court that the Customer Defendants infringe the '432 patent
 18 claims. *See* 6/28/06 Ricoh's Reply in Support of Its Motion to Compel Against Matrox Defendants, at
 19 2:7-9; 7/18/06 joint letter to J. Chen, at 2-3]. Thus, Ricoh continues to make representations to the
 20 Court that the Customer Defendants infringe the '432 patent.

21 By continuing to assert that the Customer Defendants literally infringe claims 13-17 of the '432
 22 patent despite the fact that it cannot prove that the Customer Defendants meet element D of the claims,
 23 Ricoh violates Rule 11. *See Buster v. Greisen*, 104 F.3d 1186, 1190 n. 4 (9th Cir. 1997); *Battles v.*
 24 *City of Fort Myers*, 127 F.3d 1298, 1300 (10th Cir. 1997); *Turner v. Sungard Business Systems, Inc.*,
 25 91 F.3d 1418, 1422 (11th Cir. 1996).

26 The Federal Circuit's decision in *Phonometrics, Inc. v. Economy Inns of America*, 349 F.3d
 27 1356 (Fed. Cir. 2003), is particularly instructive. In *Phonometrics*, the plaintiff asserted that the
 28 defendants infringed the plaintiff's patent on a system for tracking the charges incurred for long-

1 distance phone calls as they are made. In a previous infringement suit involving the same patent (the
 2 “Northern Telecom” case), the Federal Circuit affirmed that the phrase “a substantially instantaneous
 3 display of cumulative call cost in dollars and cents” in the patent’s only independent claim required
 4 that the system provide the caller with information regarding the cost of the call while the call is in
 5 progress. Despite this claim construction and the fact that the defendants’ allegedly infringing
 6 products did not provide this functionality, the plaintiff continued to pursue its infringement action
 7 against the defendants.

8 The defendants filed a Rule 11 motion to dismiss the claims and recover attorney’s fees and
 9 costs. The district court granted the defendants’ Rule 11 motion and awarded attorney’s fees and
 10 costs,¹² reasoning that after the *Northern Telecom* decision ,the plaintiff had an obligation to refrain
 11 from further advocating its infringement position, which had become untenable due to the claim
 12 construction. *See Phonometrics*, 349 F.3d at 1360-61. The Federal Circuit affirmed, explaining that
 13 when the plaintiff’s counsel continued to pursue infringement claims against the defendants despite the
 14 adverse claim construction, the plaintiff’s counsel “was advocating legal theories which he knew were
 15 no longer tenable. Such continued pursuit of frivolous claims is precisely what Rule 11 is meant to
 16 deter.” *See id.* at 1362.

17 Similarly, Ricoh continues to advocate an infringement theory that is completely untenable in
 18 light of the Court’s claim construction. Rather than applying the Court’s definition of “RTL
 19 descriptions as taught in Darringer” for element D of claim 13, Ricoh’s expert Dr. Papaefthymiou
 20 applies his own definition of that term in his infringement analysis – a definition that the Court
 21 previously rejected as incorrect. But Ricoh cannot simply ignore the Court’s claim construction and
 22 continue pressing its infringement claims on the theory that the Court’s claim construction is incorrect.
 23 As discussed in *Phonometrics*, such a position is completely frivolous. *See id.* at 1363. Ricoh should
 24 not be allowed to continue wasting the Court’s and the parties’ time and resources on its wholly
 25
 26

27 ¹² The district court denied as moot the defendants’ request to dismiss the claims because the claims had already been
 28 dismissed on summary judgment.

1 meritless infringement claims, and monetary sanctions should be imposed on Ricoh and Ricoh's
 2 counsel to deter any future repetition of this misconduct.

3 **IV. CONCLUSION**

4 The purpose of Rule 11 is to prevent parties from pursuing frivolous claims such as the
 5 infringement claims that Ricoh continues to assert in this litigation. Ricoh has failed to set forth any
 6 expert opinion to show that the Customer Defendants' accused input descriptions meet the "describing
 7 . . . architecture independent actions and conditions" element of the '432 claims as that element has
 8 been construed by the Court, leaving Ricoh with no basis to continue asserting infringement claims
 9 against the Customer Defendants. The Customer Defendants therefore respectfully request that the
 10 Court impose sanctions against Ricoh and its counsel by: (1) dismissing all claims of infringement of
 11 the '432 patent against the Customer Defendants, (2) directing Ricoh and/or Ricoh's counsel to pay for
 12 all attorney's fees and costs incurred in defending against Ricoh's infringement claims from June 23,
 13 2006 to the present, and (3) directing Ricoh and/or Ricoh's counsel to pay the attorney's fees and costs
 14 incurred in bringing the present motion.

15 Dated: August 18, 2006

Respectfully submitted,

16 HOWREY LLP

17 By: _____
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 25 _____
 26 _____
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 28 _____

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PROOF OF SERVICE

I am employed in the County of San Francisco, State of California. I am over the age of 18 and not a party to the within action. My business address is 525 Market Street, Suite 3600, San Francisco, California 94105.

On August 19, 2006 I served on the interested parties in said action the within:

**NOTICE OF MOTION AND MOTION FOR RULE 11 SANCTIONS AGAINST RICOH
FOR ASSERTING FRIVOLOUS CLAIMS**

by causing said document to be sent by Electronic Mail on August 19, 2006 to the email addresses indicated for the parties listed below:

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I declare under penalty of perjury that I am employed in the office of a member of the bar of this Court at whose direction the service was made and that the foregoing is true and correct.

Executed on August 19, 2006, at San Francisco, California.

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